

APPLICATION

Of

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For

UNITED STATES LETTERS PATENT

On

SHINGLE LIFTING TOOL

Sheets of Drawings: 5 (Formal)

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TITLE: SHINGLE LIFTING TOOL

CROSS-REFERENCE TO RELATED APPLICATIONS

- 5 This application for a utility patent claims the benefit of U.S. Provisional Application No. 60/243,638, filed Oct. 27, 2000.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH

10 Not Applicable

BACKGROUND OF THE INVENTION

15 FIELD OF THE INVENTION:

This invention relates generally to shingle lifting tools, and more particularly to a shingle lifting tool that includes a shock absorbing system to protect a user from injury.

20 DESCRIPTION OF RELATED ART:

Shingle lifting tools are well known in the art. The following art defines the present state of this field:

Whittier, U.S. 1,218,145, teaches a shingle stripper that includes a blade attached to a handle with a socket. The blade is formed of a single square sheet of steel and includes front and rear edges having notches for prying nails.

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Peck, U.S. 2,714,907, teaches a shingle lifter that is mounted on a pair of rollers to position an outwardly extending shingle-lifting blade for prying up shingles.

Renner, U.S. 4,182,390, teaches a roof shingle removing tool that includes a main support shaft that is attached to a shingle removing blade. An angled arm extends from the main support shaft so that the user can grip both the main support shaft and the angled arm to utilize the tool for removing shingles.

Williams, U.S. 5,010,791, teaches a shingle pry bar having a triangular prying blade that is secured to a pipe handle at an angle of between 20-25 degrees. The prying blade includes a blunt apex and two lateral sides, each of the sides having notches therein for prying nails and the like.

Whitesell, U.S. 5,159,859, teaches a shingle lifting tool having an articulated, elongated handle having upper and lower sections joined at an intermediate pivot. The lower section is angled forwardly, out of alignment with respect to the upper section. A flat blade is secured to the lower section for slipping beneath shingles. The blade includes a curved arch member to facilitate the lifting and rolling operation of the blade.

Fieni, U.S. 5,280,676, teaches an apparatus for removing shingles and nails from a roof. The apparatus includes a hollow handle portion and a replaceable blade portion attached to the handle. The blade has a front edge having notches for pulling nails. The blade also includes
5 a flat central plate extending rearwardly from the blade.

The prior art teaches various shingle lifting tools. However, the prior art does not teach a shingle lifting tool that includes a shock absorbing system for protecting a worker from stain during the use of the tool. The present invention fulfills these needs and provides further related advantages as described in the following summary.

SUMMARY OF THE INVENTION

The present invention teaches certain benefits in construction and use which give rise to the objectives described below.

The present invention provides a lifting tool having a handle, a lifting tool head, and a means for slidably mounting the lifting tool head on the handle such that the lifting tool head slides
20 with respect to the handle between an extended position and a compressed position. The lifting tool further includes a means for biasing the lifting tool head towards the extended position. Since the lifting tool head can slide against the bias of the means for biasing, the lifting tool can absorb some of the shock if the lifting tool head strikes a hard obstruction,

thereby sparing a user from the strain and potentially avoiding an injury that could result from the strain.

A primary objective of the present invention is to provide a lifting tool having advantages not taught by the prior art.

Another objective is to provide a lifting tool having a shock absorbing system that reduced stress and strain on the arms of the user.

Other features and advantages of the present invention will become apparent from the following more detailed description, taken in conjunction with the accompanying drawings, which illustrate, by way of example, the principles of the invention.

BRIEF DESCRIPTION OF THE DRAWING

The accompanying drawings illustrate the present invention. In such drawings:

FIGURE 1 is an exploded perspective view of a first embodiment of the present invention, a shingle lifting tool for removing shingles from a roof;

FIGURE 2 is a perspective view thereof, illustrating the shingle lifting tool in an extended position;

FIGURE 3 is another perspective view thereof, illustrating the shingle lifting tool in a compressed position;

FIGURE 4 is an exploded perspective view of an alternative embodiment of a lifting tool;

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FIGURE 5 is a side elevational view of another alternative embodiment of the lifting tool.

DETAILED DESCRIPTION OF THE INVENTION

The above-described drawing figures illustrate the invention, a lifting tool **10** having a handle **20**, a lifting tool head **36**, and a means for slidably mounting the lifting tool head **36** on the handle **20** such that the lifting tool heads **36** slides with respect to the handle **20** between an extended position and a compressed position. The lifting tool **10** further includes a means for biasing **50** the lifting tool head **36** towards the extended position. Since the lifting tool head **36** can slide against the bias of the means for biasing **50**, the lifting tool **10** can absorb some of the shock if the lifting tool head **36** strikes a hard obstruction such as a nail **12**, thereby sparing a user from the strain and potentially avoiding an injury that could result from the strain.

In one embodiment, as shown in Figs. 1-3 and 5, the lifting tool **10** is a shingle lifting tool **10**.

In this embodiment, the lifting tool head **36** is provided by a shingle lifting head **36** that is adapted for lifting shingles from a roof. The shingle lifting head **36** includes a planar face **40** having a leading edge **44** that is preferably straight and adapted to slide under the shingles and thereby facilitate their removal. The leading edge **44** preferably includes at least one notch **46** shaped to fit around the nail **12** for removing the nail **12**. The planar face **40** preferably includes a pry bar lever **42** that extends downwardly from the planar face **40** and is shaped to provide superior leverage for using the leading edge **44** to pry up the shingles.

In an alternative embodiment, as shown in Fig. 4, the planar face **40** includes an elongate aperture **48** shaped for grabbing the nails **12**. The elongate aperture **48** is preferably oval in shape so that the center of the elongate aperture **48** is large enough to receive the nail **12**, but the nail **12** cannot escape when it slides to the side of the elongate aperture **48**. Obviously those skilled in the art can use apertures having a number of different shapes to provide this function, and these alternative shapes should be considered within the scope of the invention.

Alternative lifting tools **10** do not have to be specifically tailored for use in lifting shingles. Potential alternative designs can include a shovel, as shown in Fig. 4, or other embodiments not shown, such as pry bars, pitch forks, tile prying devices, and the like. Such alternative embodiments are included within the scope of the term lifting tool **10**, and should be considered within the scope of the claimed invention.

As shown in Figs. 1-5, the handle **20** has a proximal end **22**, an elongate body **24**, and a distal end **26**. The elongate body **24** of the handle **20** is preferably a strong, rigid rod or shaft, constructed of fiberglass, wood, plastic, or similar material, and is adapted to enable a user to grasp the handle **20** for use of the shingle lifting tool **10**. In one embodiment, as shown in Fig. 1-3, the handle **20** further includes a generally U-shaped mounting bracket **32** at the proximal end **22**. The generally U-shaped mounting bracket **32** mounts a traverse gripping bar **34** the provides a useful gripping location for the user to utilize the full leverage of the handle **20**. While we refer to the generally U-shaped mounting bracket **32** as having a specific shape (generally U-shaped), this terminology is used only because it clearly describes the concept of the element, and this term is considered to encompass alternative shapes that serve the purpose of supporting the traverse gripping bar **34** in its proper traverse position.

In another embodiment, as shown in Figs. 4-5, the proximal end **22** of the handle **20** has a featureless terminus **30**. Since the structure of this type of handle **20** is well known in the art, it is not described in greater detail herein. Those skilled in the art can provide additional features to enhance the function of the lifting tool **10**.

The shingle lifting head **36** is attached to the handle **20** with the means for slidably mounting the shingle lifting head **36** on the handle **20**. Those skilled in the art can devise many mechanisms for achieving the slidable mount, and any alternative that can be devised by one skilled in the art should be considered within the scope of the invention as claimed. The preferred arrangement is described below.

In one embodiment, as shown in Figs. 1 and 4, the distal end **26** has an elongate internal cavity **28** extending into the elongate body **24**. The elongate internal cavity **28** can have any cross-sectional shape, preferably an asymmetrical shape such as oval, as shown in Fig. 1, or rectangular, as shown in Fig. 4. The shingle lifting head **36** of this embodiment includes a mounting rod **38** extending upwardly from the shingle lifting head **36**. The mounting rod **38** is adapted to slidably engage the elongate internal cavity **28** for slidably mounting the shingle lifting head **36** upon the handle **20**. The combination of the mounting rod **38** and the elongate internal cavity **28** allows the shingle lifting head **36** to slide with respect to the handle **20** between an extended position and a compressed position.

The shingle lifting tool **10** further includes a means for anchoring the mounting rod **38** within the elongate internal cavity **28** so that the mounting rod **38** does not fall out of the elongate internal cavity **28**. In one embodiment, as shown in Figs. 1-4 the means for anchoring is a mounting bolt **60** adapted to be positioned through a mounting slot **62** of the mounting rod **38** and a mounting aperture of the elongate body **24** to lock the mounting rod **38** within the elongate internal cavity **28**.

In an alternative embodiment, as shown in Fig. 5, the means for anchoring is an anchor sleeve **74** that is attached to both the handle **20** and the shingle lifting head **36**. The anchor sleeve **74** maintains the shingle lifting head **36** in the extended position and prevents the shingle lifting head **36** from falling off the handle **20**. The anchor sleeve **74** can be flexible so that it

does not impede the movement of the shingle lifting head **36** with respect to the handle **20**; and in another alternative embodiment, the anchor sleeve **74** is slidably fastened to either the shingle lifting head **36** or the handle **20**, thereby allowing the necessary movement. Obviously, those skilled in the art can devise similar mechanisms, and such mechanisms
5 should be considered within the scope of the claimed invention.

As illustrated in Fig. 5, it is possible to reverse the means for slidably mounting, and such a reversal is expressly considered within the scope of the claimed invention. While the mounting rod **38** extends from the shingle lifting head **36** in the embodiment shown in Fig. 1, and the elongate internal cavity **28** is within the handle **20**, it is possible to reverse these positions. As shown in Fig. 5, the handle **20** includes a downwardly extending rod **70** that mates with a cavity **72** within the shingle lifting head **36**.

As shown in Figs. 1-5, the means for biasing **50** the shingle lifting head **36** towards the extended position is preferably a coil spring; however, any other manner of springs and the like can be adapted by those skilled in the art, and should be considered within the scope of the invention. The coil spring **50** is preferably adapted to fit around the mounting rod **38** and bias the shingle lifting head **36** towards the extended position. As shown in Fig. 2, the coil spring **50** pushes the handle **20** away from the shingle lifting head **36** until the mounting bolt
15 **60** slides to the end of the mounting slot **62**. As shown in Fig. 3, when the shingle lifting head **36** strikes a nail **12** or other obstruction, and impact sends a jolt up the shingle lifting

head **36**, the mounting rod **38** slides into the elongate internal cavity **28** against the bias of the coil spring **50**, thereby absorbing the shock.

As shown in Fig. 4, the lifting tool **10** further includes a mounting cable **66** that attaches the shingle lifting head **36** to a cable anchor point **68** of the handle **20**. The mounting cable **66** functions as a safety device to prevent the shingle lifting head **36** from falling off of the handle **20**. Inadvertently dropping the shingle lifting head **36** from a roof could have deadly consequences to workers below, so added safety features can be important. Equivalent anchors should be considered within the scope of the claimed invention.

While the invention has been described with reference to at least one preferred embodiment, it is to be clearly understood by those skilled in the art that the invention is not limited thereto. Rather, the scope of the invention is to be interpreted only in conjunction with the appended claims.